

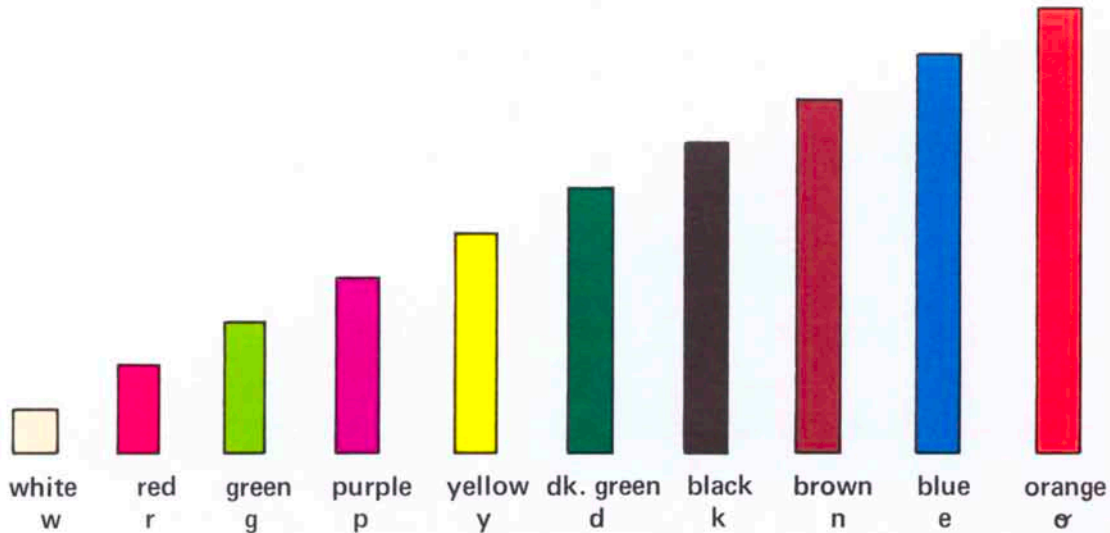
GROUND RULES

Ground rules are arbitrary, but the advantage of using established ground rules, rather than making up your own, lies in your ability to communicate with other people who are using them. Baseball would be just as good a game if first base were located to the left of home plate, but a child who had learned the game in this way would be handicapped when he transferred to another school. So

it is with the terminology and conventions of the rods.

These, then, are the established ways of designating the rods and of performing arithmetic operations with them.

First, the names and letter designations, already discussed but repeated here for reference.



Next we consider the arithmetic operations, all of which will be discussed in greater detail in appropriate later sections.

ADDITION: $r + g =$

Place rods end to end to make a train. Find a single rod to match the length of this train: $r + g = y$



(Note: In some earlier books about the rods, the letter **U** was used to designate the blue rod. This use has been discontinued because of possible confusion with the symbol **U** when used as an operation on sets.)

If the train is longer than an orange rod, match it with a train made of as many orange rods as will fit and whatever smaller rod will fill out the length of

the train. Numerical answers are obtained by setting some rod as the unit, for example the white rod.

$$p + g + k + y + d$$



$$2 \times o + y$$

If $w = 1$, this shows $4 + 3 + 7 + 5 + 6 = 25$